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Frozen in Time: Prehistoric Life in Antarctica

by Jeffrey D Stilwell and John A Long

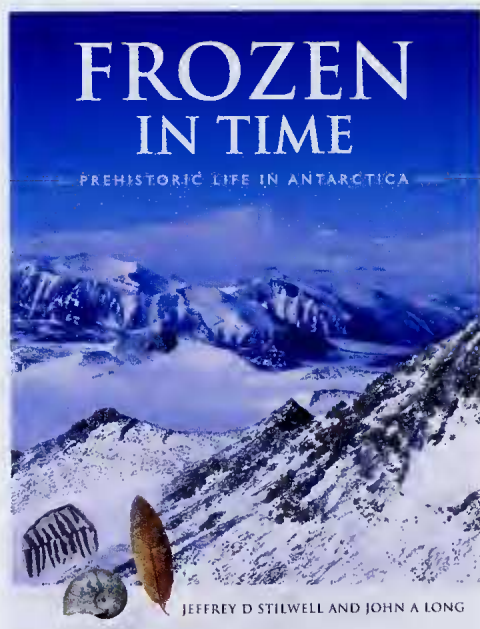
Publisher: CSIRO Publishing, Collingwood, Victoria, 2011. 248 pages, hardback, colour illustrations. ISBN 9780643096356. RRP \$69.95

To try to tell the story of life on any of the Earth's continents in a single volume would be a daunting challenge. To illustrate the life-story of a continent, 98% of which is covered with ice up to 5 km thick, would seem impossible.

This is what Dr Jeffrey Stilwell and Professor John Long, the authors of *Frozen in Time: Prehistoric Life in Antarctica*, have set out to do and, in my opinion, they have succeeded brilliantly. This beautifully produced and profusely illustrated 238-page volume provides readers with almost everything they need to know about Antarctica's fascinating life history and, should they wish to explore farther, its 33 pages of further reading references provide an invaluable research guide.

We know little about Antarctic life during the first four billion years of Earth history (Precambrian Eon). Now, thanks to scientific discoveries by innumerable expeditions over the past century, we know that Antarctica has not always been ice-bound. For most of the time since the Cambrian Period, 540 million years ago, Antarctica has supported rich and diverse plant and animal life and has undergone major climatic changes.

By combining their different skills and expertise (Stilwell in ancient environments and



Long in the evolution of vertebrates) and their first-hand experience of different parts of Antarctica, the authors trace its history in a comprehensive, well-illustrated review based on its fossil record.

At different times Antarctica has formed part of several earlier super-continents, the latest of which, Gondwana, is now widely dispersed to form the present southern continents plus India. Antarctica provides crucial evidence linking all of these, including Australia.

Find out about Antarctica's rich Devonian fish faunas from Southern Victoria Land and their world-wide links; the Permo-Triassic amphibian and mammal-like reptile faunas with strong links to South Africa; the spectacular discovery of Jurassic dinosaur skeletons, recovered from high in the Trans-Antarctic mountains along the Beardmore Glacier; the discovery of fossil bird and mammal remains (including early marsupials) on Seymour Island, off the Antarctic Peninsula – and the fascinating stories behind these and many more.

Some of the descriptions are unavoidably a bit technical but don't be put off. The text is clearly written and is backed by a nine page scientific glossary. It is illustrated by a wealth of beautiful photographs, supplemented by artists' recon-

structions, as well as stunning images of Antarctic landscapes.

In 1970–71 I had the good fortune to be invited to join a two-month-long New Zealand university expedition to Antarctica to search for Devonian fish fossils. It was an unforgettable experience and some of the finest specimens I discovered are featured in *Frozen in Time*.

I have always hoped that someone would write and illustrate the story of past life in Antarctica to let others share its fascinating history. Now Jeffrey Stilwell and John Long have done just that for the first time and we are in their debt.

I strongly recommend *Frozen in Time* and, if you can't buy it yourself, I suggest that you recommend it to your local public library or school library so everyone can enjoy it and share in the thrill of discovery on a frozen continent.

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Life in a gall: The biology and ecology of insects that live in plant galls

by Rosalind Blanche

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The intricate relationships between insects and plants take many forms, from simple external herbivory to the subtle and highly specific associations that can result in insects living within plants as highly co-evolved foliage-miners or, as here, gall-formers. These varied taxa induce the plants to produce highly characteristic excrescences (galls) that serve as a domicile for the insect, leaving it unexposed to the outer world. Galls have for long intrigued biologists. The extensive arrays of cynipoid wasps forming galls on oak trees in the northern hemisphere, together with their numerous and equally specific associates (so that each gall can become the hub of a community of the primary gall-forming species, its parasitoids and inquilines)

were studied, for example, by Alfred Kinsey long before his noteworthy studies of human sexuality.

Galls are very special structures, as Rosalind Blanche demonstrates in this excellent short introduction, and are induced by many kinds of insect as well as other animals and fungi. This book is both highly readable and scientifically informative, with its appeal enhanced by the numerous excellent colour photographs (many of them contributed by recognised experts in the insect groups depicted) and clear diagrams that adorn each page. It brings together information on many of Australia's highly characteristic and endemic endophytic insects in a context that emphasises their intriguing ecology